

CLAIMS

1. A muzzle-loading firearm comprising:

a barrel;

a breach plug situated in a rear end of the barrel and adapted to receive a percussion cap;

a pivoting block mounted for pivotal motion relative to the barrel and having a firing mechanism mounted thereto, the firing mechanism including a striker for striking the percussion cap, a hammer for driving the striker, and a trigger for tripping the hammer, the pivoting block being pivotal between a blocked position for firing and an unblocked position for providing access to the breech plug for removing a spent percussion cap and replacing it with a fresh percussion cap; and

a trigger guard pivotally mounted to the pivoting block for movement between three positions:

a locked position locking the pivoting block in its blocked position;

an unlocked, blocked position in which the pivoting block is still in its blocked position, but the pivoting block is ready to be moved therefrom; and

an unlocked, unblocked position in which the pivoting block has been unblocked, providing access to the breech plug,

and wherein rotation of the trigger guard from the unlocked, blocked position to the unlocked, unblocked position causes the pivoting block to move from its blocked position to its unblocked position.

2. A muzzle-loading firearm as claimed in Claim 1 wherein the trigger guard is held in its locked, blocked position by a spring clamp.

3. A muzzle-loading firearm as claimed in Claim 2 wherein the spring clamp tends to hold the trigger guard in its locked, blocked position, but does not apply a biasing force biasing the trigger guard against movement from the unlocked, blocked position toward the unlocked, unblocked position.
4. A muzzle-loading firearm as claimed in Claim 1 wherein the trigger guard is biased toward its locked, blocked position by a biasing spring.
5. A muzzle-loading firearm as claimed in Claim 1 wherein the trigger guard, when in its unlocked positions, is operative to prevent the trigger from being operated.
6. A muzzle-loading firearm as claimed in Claim 1 wherein the trigger guard, when in its locked, blocked position engages a fixed barrier to prevent the pivoting block from moving from the blocked position to the unblocked position.
7. A muzzle-loading firearm as claimed in Claim 1 wherein as the trigger guard moves from its locked position to its unlocked, blocked position it pivots relative to the pivoting block and wherein as the trigger guard moves from its unlocked, blocked position to its unlocked, unblocked position, the trigger guard and the pivoting block pivot together relative to the barrel.

8. A muzzle-loading firearm comprising:

a barrel;

a breach plug situated in a rear end of the barrel and adapted to receive a percussion cap;

a pivoting block having a firing mechanism mounted thereto, the firing mechanism including a striker for striking the percussion cap, a hammer for driving the striker, and a trigger for tripping the hammer, the pivoting block being pivotal between a blocked position for firing and an unblocked position for providing access to the breech plug for removing a spent percussion cap and replacing it with a fresh percussion cap; and

a lever movably mounted to the pivoting block for movement between a locked position locking the pivoting block in its blocked position, an unlocked, blocked position, and an unlocked, unblocked position, and wherein movement of the lever from the unlocked, blocked position to the unlocked, unblocked position moves the pivoting block from its blocked position to its unblocked position.

9. A muzzle-loading firearm as claimed in Claim 8 wherein the lever comprises a trigger guard.

10. A muzzle-loading firearm as claimed in Claim 9 wherein the trigger guard is pivotally mounted to the pivoting block.

11. A muzzle-loading firearm as claimed in Claim 10 wherein the trigger guard is held in its locked, blocked position by a spring clamp.

12. A muzzle-loading firearm as claimed in Claim 11 wherein the spring clamp tends to hold the trigger guard in its locked, blocked position, but does not apply a biasing force biasing the trigger guard against movement from the unlocked, blocked position toward the unlocked, unblocked position.

13. A muzzle-loading firearm as claimed in Claim 8 wherein the lever is biased toward its locked, blocked position by a biasing spring.
14. A muzzle-loading firearm as claimed in Claim 8 wherein the lever, when in its unlocked positions, is operative to prevent the trigger from being operated.
15. A muzzle-loading firearm as claimed in Claim 8 wherein the lever, when in its locked, blocked position engages a fixed barrier to prevent the pivoting block from moving from the blocked position to the unblocked position.
16. A muzzle-loading firearm as claimed in Claim 10 wherein as the trigger guard moves from its locked position to its unlocked, blocked position it pivots relative to the pivoting block and wherein as the trigger guard moves from its unlocked, blocked position to its unlocked, unblocked position, the trigger guard and the pivoting block pivot together relative to the barrel.

17. A muzzle-loading firearm comprising:

a barrel having:

a breech plug;

a pivoting junction axle; and

a blocking axle;

a pivoting firing mechanism having:

a trigger;

a hammer;

a striker; and

a notch;

wherein the pivoting firing mechanism is pivotally attached to the barrel at the pivoting junction axle;

wherein the blocking axle is slidably positioned in the notch; and

wherein pivoting of the firing mechanism to an unblocked position is guided by the blocking axle in the notch and provides substantial clearance to the breech plug for the placement of a percussion cap.

18. The firearm of Claim 17 wherein pivoting of the firing mechanism to the unblocked position provides sufficient clearance for the cleaning of the striker.

19. The firearm of Claim 17 wherein the notch is substantially "L"-shaped.

20. The firearm of Claim 17 wherein the pivoting firing mechanism further comprises a trigger spring associated with the trigger, a hammer spring associated with the hammer, and a striker spring associated with the striker.

21. The firearm of Claim 17 wherein the notch is substantially "L"-shaped.
22. A muzzle-loading firearm comprising:
 - a barrel having:
 - a breach plug inserted substantially at the back end of the barrel;
 - a trigger guard blocking axle; and
 - a pivoting junction axle;
 - a pivoting firing mechanism having:
 - a lineal striker which is substantially in line with the breach plug and substantially at the rear end of said barrel;
 - a lineal striker spring substantially between the striker and the breach plug;
 - a hammer having:
 - a strike end, which is substantially behind the lineal striker and rotationally in line with the striker;
 - a middle portion having:
 - a hammer protuberance; and
 - a set back uncocking support;
 - a hammer lever portion having:
 - a hammer safety notch; and
 - a hammer cocked notch
 - a hammer spring, wherein a first end of the spring is in contact with the hammer protuberance;

a trigger having:

a trigger uncocked lever;

a trigger shooting lever; and

a trigger safety lever;

a trigger spring; and

a trigger guard having:

a pivot-guiding notch, wherein the trigger guard blocking axle is slidably positioned within the pivot-guiding notch; and

wherein the combination of the pivot-guiding notch and the trigger guard blocking axle directs the pivoting of said firing mechanism in respect to said barrel.

23. The firearm of Claim 22 wherein the pivot-guiding notch is substantially "L"-shaped.

24. The firearm of Claim 22 wherein the pivoting of the firing mechanism allows the firing mechanism to pivot away from the barrel to such a degree to allow for clearance for insertion of a percussion cap without the aid of any tool.

25. The firearm of Claim 22 wherein the trigger guard further has a trigger guard safety lever; and wherein when the firing mechanism pivots away from the barrel, the trigger guard safety lever is aligned with the trigger safety lever, thereby preventing substantial movement of the trigger.

26. The firearm of Claim 22 wherein when the trigger uncocked lever is substantially contacting the hammer, the trigger spring is pre-loaded.

27. The firearm of Claim 22 wherein when the trigger shooting lever is substantially in contact with the hammer cocked notch the firearm may be shot by pulling on the trigger.

28. The firearm of Claim 22 wherein following shooting the firearm, the firearm is in a post-shooting position where the hammer strike portion remains substantially in contact with the lineal striker.

29. The firearm of Claim 22 wherein when the firearm is in the post-shooting position, the trigger guard safety lever is positioned in a manner in relation to the trigger safety lever to substantially prevent the rotation of the firing mechanism.

30. A muzzle-loading firearm comprising:

- a barrel having:

- a breach plug inserted substantially at the back end of the barrel;

- a blocking axle; and

- a pivoting axle;

- a pivoting firing mechanism having:

- a trigger;

- a trigger spring;

- a hammer;

- a hammer spring

- a lineal striker; and

- a striker spring;

- a trigger guard having a guiding notch;

- wherein the firing mechanism is pivotally attached the pivoting axle; and

- wherein the firing mechanism slides within the guiding notch at the blocking axle.

31. The firearm of Claim 30 wherein:

the notch comprises an "L"-shaped notch, wherein the "L"-shaped notch has a first portion and a second portion;

wherein when the firing mechanism slides along the first portion of the notch, the firing mechanism is unblocked; and

wherein when the firing mechanism slides along second portion of the notch the lineal striker of the firing mechanism moves away from the barrel of the firearm to provide sufficient clearance for easy insertion of a percussion cap between the striker and the barrel without the help of any tool.

32. The firearm of Claim 30 wherein the firing mechanism further comprises:

a base having:

a base-hammer protuberance;

where the hammer further comprises a:

a hammer protuberance;

a hammer safety notch;

where the trigger further comprises a:

trigger safety lever; and

wherein when the hammer is uncocked, the hammer spring is preloaded between the protuberances and the hammer is separated from the striker due to contact between the hammer safety notch and the trigger safety lever.

33. The firearm of Claim 30, wherein when the hammer is in a post-shooting position, the hammer is in contact with the striker and the trigger spring is loaded with sufficient force to return the trigger safety lever to the hammer safety notch, thereby returning the hammer to the un-cocked position.

34. A firearm comprising:

a barrel having a pivot axle and a blocking axle;

a firing mechanism having a guiding notch wherein the firing mechanism is pivotally affixed to said barrel about the pivot axle; and

wherein the guiding notch directs the pivoting action of the firing mechanism.

35. The firearm of Claim 34 where the guiding notch is substantially "L"-shaped.

36. The firearm of Claim 34 where the firing mechanism further comprises:

a trigger having a trigger safety notch;

a trigger guard having a trigger safety lever;

wherein the L-shaped notch has a first portion and a second portion; and

wherein when the firing mechanism pivots from the first portion to the second portion, the trigger safety notch and the trigger safety lever substantially align and substantially prevent the pulling of the trigger.

37. The firearm of Claim 34 where
- the barrel has a open end and a substantially closed end;
- the firing mechanism further comprises a lineal striker;
- the "L"-shaped notch has a first portion and a second portion;
- when the firing mechanism is in the first portion, the linear striker and the closed end of the barrel are substantially aligned; and
- when the firing mechanism is in the second open position, there is clearance between the striker and the closed end of the barrel to allow for easy insertion of a percussion cap between the striker and the closed end of the barrel without the help of any tool.
38. A muzzle-loading firearm comprising a barrel, a firing mechanism pivotally affixed to said barrel and movable between a closed position and an open position, and a hammer pivotally coupled to the firing mechanism, said hammer being movable between an uncocked position and a cocked position, wherein the hammer cannot be moved to its cocked position when the firing mechanism is in its open position.
39. The muzzle-loading firearm of Claim 38, wherein said firing mechanism cannot be moved to its open position when the hammer is in its cocked position.